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10/078,499	02/21/2002	Takashi Tsue	Q66587	4701

		EXAMINER
7590	04/06/2006	PAPANIKOLAOU, ATHANASIOS T

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/078,499	TSUE ET AL.
	Examiner	Art Unit	
	Athanasios Tom Papanikolaou	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>02 February 2006</u>.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-26* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-26* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

1.   Applicant's amendment was received on 2/2/06, and has been entered and made

of record. Currently, **claims 1-18,** in addition to newly added **claims 19-24,** are pending.

Response to Arguments

2.   Applicant's arguments filed 2/2/06, with respect to the rejection of claims 1-18,

cited in the Office Action dated 11/2/05 as being anticipated by Sasaki (U.S. Patent

Application Publication 2004/0105016), have been fully considered but they are not

persuasive.

In response to the arguments regarding the rejection of claim 1, applicant argues

on pages 10-11 that Sasaki fails to teach of *sequentially dividing image data into small*

blocks of image data, each having a data volume according to the characteristics of an

image process to be performed. The examiner agrees that claim 27 and figure 3 do not

specifically indicate a data volume in relation to the characteristics of the image process

to be performed. However, upon further inspection, the examiner notes that the RPU

(real-time processing unit) in figure 3 performs processing on a single pixel block in

element 41 and performs multi-line block processing in relation to element 42 which is

further explained in paragraph 140, lines 15-24. Therefore, one of ordinary skill in the art

can recognize the system of Sasaki does teach image data is divided in blocks with a

data volume according to their respective processing modules.

Therefore, the rejection of independent claim 1 cited in the Office action dated

11/2/05, under 35 U.S.C 102(e), as being anticipated by Sasaki, is maintained in this

Office Action.

Specification

3.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed. The following title is

suggested: Sequential Segmentation of Image Data into Blocks in Accordance with

Image Processing to be Performed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form

the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by

Sasaki (U.S. Patent Application Publication 2004/0105016 A1).

<u>Regarding claim 1</u>, Sasaki discloses **a method of processing images, wherein**

inputted image data is subjected to image processes and the processed image

data is outputted, comprising the steps of sequentially dividing inputted image

data into small blocks of image data, each having a data volume according to the

characteristics of an image process be performed, sequentially performing an

image process on said small blocks of image data sequentially obtain small

blocks of processed image data (the RPU in figure 3 performs a first processing on a

single pixel block in element 41 and performs subsequent processing of multi-line

blocks in relation to element 42 which is further explained in paragraph 140, lines 15-

24), and sequentially outputting said small blocks of processed image data to an

output destination (fig 2 and paragraph 4).

Regarding claim 3, Sasaki discloses the limitations of claim 1 as stated above

and further teaches said inputted image data is cached, and said cached inputted

imaged data is divided into the small blocks of image data (fig 2, element 29a and

23: RPU performs segmenting according to processing).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claim 2 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Sasaki in

view of Yokoyama (U.S. Patent 5,381,163).

Sasaki discloses the method above in claim 1.

Sasaki does not disclose expressly **said inputted image data is divided into said small blocks of data in accordance with the access characteristics of said inputted image data.**

Yokoyama discloses **said inputted image data is divided into said small blocks of data in accordance with the access characteristics of said inputted image data** (see abstract).

Sasaki and Yokoyama are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Sasaki's method include dividing the image data into blocks according to the characteristics of the inputted image data, as taught by Yokoyama. The suggestion or motivation for doing so would have been that Sasaki's system could divide the image data into segments while maintaining the functionality of the original input data. Therefore, it would have been obvious to combine the teachings of Yokoyama with the method of Sasaki to obtain the invention in claim 2.

6.   Claim 4 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Sasaki in view of Shiraiwa (U.S. Patent Application Publication 2005/0162695 A1).

Sasaki discloses the method above in claim 1 and **said processed small blocks of image data are sequentially cached** (see Fig. 2).

Sasaki does not disclose expressly **and output data is outputted from said cached small blocks of processed image data, according to the characteristics of the output destination.**

Shiraiwa discloses **and output data is outputted from said cached small**

blocks of processed image data, according to the characteristics of the output

destination (paragraph 30).

Sasaki and Shiraiwa are combinable because they are from the same field of

endeavor namely image processing. At the time of the invention it would have been

obvious to a person of ordinary skill in the art to have Sasaki's method include

outputting the processed data according to the characteristics of the output location, as

taught by Yokoyama. The suggestion or motivation for doing so would have been that

Sasaki' system could send the image data in a compatible format with the output

destination. Therefore, it would have been obvious to combine the teachings of Shiraiwa

with the method of Sasaki to obtain the invention in claim 4.

7.   Claim 5 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Sasaki in

view of Ohta (U.S. Patent Application Publication 2002/0051230 A1), and further in view

of Redd et al. (U.S. Patent Application Publication 2005/0190400 A1).

Sasaki discloses the method above in claim 1.

Sasaki does not disclose expressly **wherein the image processes are**

performed in accordance with the characteristics of the inputted image data.

Ohta discloses **wherein the image processes are performed in accordance**

with the characteristics of the inputted image data (see abstract and paragraph 41).

Sasaki and Ohta are combinable because they are from the same field of

endeavor namely image processing. At the time of the invention it would have been

obvious to a person of ordinary skill in the art to have Sasaki's method include image

processing according to the characteristics of the inputted data, as taught by Ohta. The

suggestion or motivation for doing so would have been that Sasaki' system could

provide flexibility in processing a wide variety of image data types. Therefore, it would

have been obvious to combine the teachings of Ohta with the method of Sasaki to

obtain the invention in claim 4.

Continuing, Sasaki and Ohta both fail to expressly disclose **and/or the**

characteristics of the output destination.

Redd discloses **and/or the characteristics of the output destination**

(paragraph 100).

Sasaki, Ohta, and Redd are combinable because they are from the same field of

endeavor namely image processing. At the time of the invention it would have been

obvious to a person of ordinary skill in the art to have Sasaki and Ohta's method include

image processing according to the characteristics of the inputted data, as taught by

Redd. The suggestion or motivation for doing so would have been that Sasaki and

Ohta's method would have flexibility in processing image data to a variety of output

destinations. Therefore, it would have been obvious to combine the teachings of Redd

with the method of Sasaki and Ohta to obtain the invention in claim 5.

8.   Claim 6 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Sasaki in

view of Redd.

Sasaki discloses the method above in claim 1.

Sasaki does not disclose expressly **a determination is made as to whether not the image process dependent on the output destination is valid or not, based on the characteristics of the input destination of the inputted image data and the output characteristics of the output destination, and for cases in which it is determined that the image process dependent on the output destination is valid, the processing dependent on said output destination is substituted for the aforementioned processing.**

Redd discloses **a determination is made as to whether not the image process dependent on the output destination is valid or not, based on the characteristics of the input destination of the inputted image data and the output characteristics of the output destination, and for cases in which it is determined that the image process dependent on the output destination is valid, the processing dependent on said output destination is substituted for the aforementioned processing** (paragraph 100).

Sasaki and Redd are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Sasaki's method include determining if the image process is compatible with the output and subsequently using the image process that is compatible with the output, as taught by Redd. The suggestion or motivation for doing so would have been that Sasaki' system could send the image data in a compatible format with the output destination. Therefore, it would

have been obvious to combine the teachings of Redd with the method of Sasaki to

obtain the invention in claim 6.

9.   Claims 7 through 12 recite identical features as claims 1 through 6, respectively,

except claims 7-12 are apparatus claims. Thus arguments similar to that presented

above for claims 1-6 are equally applicable to claims 7-12.

10.   Claims 13 through 18 recite identical features as claims 1 through 6 except

claims 13-18 are computer readable medium claims. Thus, arguments similar to that

presented above for claims 1-6 are equally applicable to claims 13-18 because without

a computer readable medium to store a program that makes it possible for the systems

to operate (the systems taught by Sasaki, Ohta, Yokoyama, Shiraiwa, and Redd), the

rejections for claims 1-6 could not function.

11.   Claim(s) 19, 20, 21 is/are rejected under 35 U.S.C. 103 (a) as being

unpatentable over Sasaki in view of Anderson et al. (U.S. Patent 4,661,987).

Regarding claim 19, Sasaki discloses the dependency of claim 1, as stated

above, but does not disclose expressly **wherein the step of sequentially dividing the**

inputted image data into small blocks of image data comprises receiving the

inputted image data line by line at a first memory and the step of sequentially

performing the image process comprises: first processing a1 lines of the inputted

image data to generate first data when b lines of image data have been received

at the first memory, b being greater than a1; storing the first data in a second memory; and second processing a2 lines of the first data stored in the second memory.

However, Anderson discloses **wherein the step of sequentially dividing the inputted image data into small blocks of image data comprises receiving the inputted image data line by line at a first memory and the step of sequentially performing the image process comprises: first processing a1 lines of the inputted image data to generate first data when b lines of image data have been received at the first memory, b being greater than a1; storing the first data in a second memory; and second processing a2 lines of the first data stored in the second memory** (abstract, col 3 lines 27-62, and fig 1).

Sasaki and Anderson are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Sasaki's system include sequentially processing portions of image data using cascading memories, as taught by Anderson. The suggestion or motivation for doing so would have been that Sasaki's system could process image data in a sequential fashion so as to improve speed. Therefore, it would have been obvious to combine the teachings of Anderson with the system of Sasaki to obtain the invention in claim 19.

Regarding claim 20, Sasaki and Anderson disclose the dependency of claim 19, as stated above, but Sasaki does not disclose expressly **wherein the first processing is x direction enlargement and the second processing is y direction enlargement.**

However, Anderson discloses **wherein the first processing is x direction enlargement and the second processing is y direction enlargement** (col 3 lines 51-53, fig 5C, and fig 1 elements 45 and 49).

Sasaki and Anderson are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Sasaki's system include a first processing in a horizontal direction and a second process in a vertical direction, as taught by Anderson. The suggestion or motivation for doing so would have been that Sasaki's system could process image data by using a well known enlarging technique. Therefore, it would have been obvious to combine the teachings of Anderson with the system of Sasaki to obtain the invention in claim 20.

Regarding claim 21, Sasaki and Anderson disclose the dependency of claim 19, as stated above, and Sasaki further teaches **wherein the first processing is color space conversion and the second processing is resolution conversion** (fig 3 elements 43 and 45).

12.   Claim(s) 22, 23, and 24 is/are rejected under 35 U.S.C. 103 (a) as being unpatentable over Anderson in view of Sasaki.

Regarding claim 22, Anderson discloses **a method of processing an image divided into a plurality of portions comprising a first portion, a second portion and a third portion, said method comprising the steps of: storing the first portion in a first memory; first processing the first portion stored in the first memory in a first image process to generate a processed first portion and storing the second portion in the first memory, the operation of first processing the first portion and the operation of receiving the second portion in the first memory substantially occurring in parallel; storing the processed first portion in a second memory; and second processing a portion of the processed first portion stored in the second memory in a second image process, first processing the second portion stored in the first memory in the first image process and storing the third portion in the thirst memory, the operation of second processing the portion of the processed first portion, the operation of first processing the second portion and the operation of storing the third portion in the first memory substantially occurring in parallel...** (abstract, col 3 lines 27-62, and fig 1: claim 22 recites nearly identical limitations as claim 19, with the exception of an added third portion which is inherent to the system along with any number of additional successive portions to complete the processing of an entire image).

Anderson does not disclose expressly...**wherein each of the first portion, the second portion and the third portion has a corresponding image data having a data volume according to characteristics of at least one of the first image process and a second image process.**

However, Sasaki discloses ...**wherein each of the first portion, the second portion and the third portion has a corresponding image data having a data volume according to characteristics of at least one of the first image process and a second image process** (the RPU in figure 3 performs a first processing on a single pixel block in element 41 and performs subsequent processing of multi-line blocks in relation to element 42 which is further explained in paragraph 140, lines 15-24).

Anderson and Sasaki are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Anderson's system include segmentation in accordance with the processing, as taught by Sasaki. The suggestion or motivation for doing so would have been that Anderson's system could divide image data into optimum sized blocks for a particular processing function therefore improving speed. Therefore, it would have been obvious to combine the teachings of Sasaki with the system of Anderson to obtain the invention in claim 22.

Regarding claim 23, Anderson and Sasaki disclose the dependency of claim 22, as stated above, and Anderson further teaches **wherein the first image process is x direction enlargement and the second image process is y direction enlargement** (col 3 lines 51-53, fig 5C, and fig 1 elements 45 and 49).

Regarding claim 24, Anderson and Sasaki disclose the dependency of claim 22, as stated above, but Anderson does not disclose expressly **wherein the first image**

process is color space conversion and the second image process is resolution conversion.

However, Sasaki discloses **wherein the first image process is color space conversion and the second image process is resolution conversion** (fig 3 elements 43 and 45).

Anderson and Sasaki are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Anderson's system include color space conversion and resolution conversion, as taught by Sasaki. The suggestion or motivation for doing so would have been that Anderson's system could logically first perform a color conversion and then adjust the resolution of the color converted image. Therefore, it would have been obvious to combine the teachings of Sasaki with the system of Anderson to obtain the invention in claim 23.

13.   Claims 25 and 26 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Sasaki in view of Yokoyama and further in view of Prakash et al. (U.S. Patent 6,778,698).

Regarding claim 25, Sasaki and Yokoyama disclose the dependency of claim 2, as stated above, but Sasaki and Yokoyama do not disclose expressly **wherein the access characteristics of said inputted image data comprises format type of image data.**

However, Prakash discloses **wherein the access characteristics of said inputted image data comprises format type of image data** (col 5 lines 10-21).

Sasaki, Yokoyama, and Prakash are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Sasaki and Yokoyama's system include dividing image data in accordance the format of the image type, as taught by Prakash. The suggestion or motivation for doing so would have been that Sasaki and Yokoyama's system could flexibly and efficiently segment image data according to a variety of popular image formats. Therefore, it would have been obvious to combine the teachings of Sasaki with the system of Anderson to obtain the invention in claim 25.

Regarding claim 26, Sasaki and Yokoyama disclose the dependency of claim 2, as stated above, but Sasaki and Yokoyama do not disclose expressly **wherein the access characteristics of said inputted image data comprises format type of image data.**

However, Prakash discloses **wherein the access characteristics of said inputted image data comprises format type of image data** (col 5 lines 10-21).

Sasaki, Yokoyama, and Prakash are combinable because they are from the same field of endeavor namely image processing. At the time of the invention it would have been obvious to a person of ordinary skill in the art to have Sasaki and Yokoyama's system include dividing image data in accordance the format of the image

type including JPEG format, bitmap format and RAW format, as taught by Prakash. The

suggestion or motivation for doing so would have been that Sasaki and Yokoyama's

system could flexibly and efficiently segment image data according to a variety of

popular image formats. Therefore, it would have been obvious to combine the teachings

of Sasaki with the system of Anderson to obtain the invention in claim 26.

Conclusion

14.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Athanasios Tom Papanikolaou whose telephone

number is (571)272-7953. The examiner can normally be reached on 9 a.m-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ed Coles can be reached on (571) 272-7402. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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